

Encouraging the Use of Impregnated Mosquito-Nets in Orissa State, India: The Problem of Sustainability

Papers presented at a
Round Table Conference
12 September 1994
Bhubaneswar, Orissa State

Edited by:
Alison Dembo Rath
Margaret Thomas
Bhubaneswar / London
1995

3/93

Received from
Alison D. Rath, Health officer
British Council
Bhubaneswar


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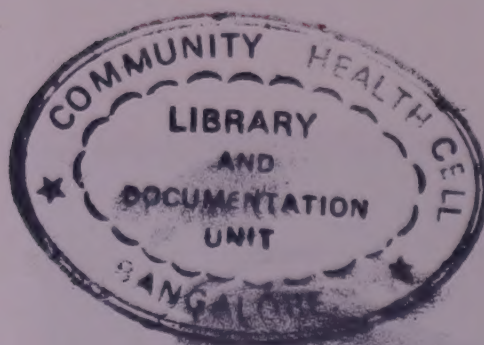
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The Problem of Sustainability
Integrated Health Care in Orissa State India
Encouraging the Use of

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Round Table Conference
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Acknowledgement

The editors wish to thank all of the Round Table participants for their presentation of papers and for their contributions to the discussions that took place at Bhubaneswar. Inevitably, presentations differed in style and this Report reflects those differences.

Preface

Malaria remains amongst the three or four most devastating diseases occurring in the world today. Roughly 110 million clinical cases of malaria develop annually. Some 270 million people are infected, carrying malaria parasites, although not necessarily developing symptoms. In India some six states (Orissa, Uttar Pradesh, Punjab, Madhya Pradesh, Gujarat and Assam) have 66% of Indian cases. Malaria has a debilitating effect on populations, with fatalities occurring most commonly in the children of the endemic regions. The situation has worsened in recent years with the inexorable spread of resistance to drugs shown by the parasite, and to insecticides by the mosquito. Much new effort is being directed towards the development of fresh and effective means of combating both parasite and mosquito. A promising new avenue is encouragement of the use of impregnated mosquito nets (IMNs) treated with synthetic pyrethroids.

The British Overseas Development Administration (ODA) has been supporting the Government of Orissa State, India, in the health sector since 1980 through the Orissa Health and Family Welfare Project (OHFWP). Past assistance has focused on developing physical infrastructure, human resource development, health promotion and social mobilisation.

The British Council Division of the British High Commission, through its Delhi Office and Field Management Office in Bhubaneswar, acts as the executive arm of the ODA in respect of the aid. The ODA indicated its willingness and enthusiasm to be involved in tackling the serious problem of malaria in Orissa and the Government of Orissa has taken up the challenge of exploring new approaches to malaria control in the State.

The area where a project involving supply of mosquito nets will be initiated is in Keonjhar district. Two blocks of the district are home to poor, tribal peoples, badly affected by malaria. A "social marketing" approach to the supply of nets has been advocated i.e; the cost of the nets and fluids should be shared between the donor (ODA), the Government of Orissa (GOO) and users themselves. It is an approach which has been used successfully in the marketing of contraceptives in India. As a first step, a collaborating NGO, CARE-Orissa, and a consultant health economist, were charged with the task of designing a questionnaire which would help establish the tribal people's ability and willingness to pay part of the cost of a mosquito-net and of its subsequent re-impregnation.

It was decided to hold a Round Table Conference in September 1994 at Bhubaneswar under the auspices of OHFWP to draw together information on the malaria situation as it existed in 1994 with regard to:

- ★ The collection of up to date information on malaria and the current measures and resource fighting it
- ★ The supply and cost of nets and fluids in the State
- ★ The experience of well established social marketing procedures that exist in Orissa or other parts of India in relation to contraceptives.
- ★ Sources of financing for nets and impregnation fluid
- ★ The draft questionnaire which would collect information on ability and willingness to pay should be presented to the Round Table by CARE-Orissa for comment.

After these presentations and discussions an important conclusion of the Round Table was that the IMN Project in Keonjhar District was an initiative worth pursuing and would be best taken forward on a "social marketing" basis. The sustainability issue was seen not merely as a question of organizational survival of one project; rather it is seen as how to make such a scheme available to the affected population of the State as a whole.

This report is intended for those likely to be involved as practitioners within the project, and for those in other parts of India and in Africa who are also engaged in trials involving IMNs and who wish to consider diverse and flexible approaches to financing IMN projects.

Acronyms

AWW	Anganwadi Workers
API	Annual Parasite Incidence
BCD	British Council Division
GOO	Government of Orissa
ICDS	Integrated Child Development Scheme
IMN	Impregnated Mosquito Net
MCH	Maternal and Child Health
MPHW	Multipurpose health workers
MRC	Malaria Research Centre
NGO	Non-Governmental Organisation
NMEP	National Malaria Eradication Programme
ODA	Overseas Development Administration
OHFWP	Orissa Health & Family Welfare Project
PHC	Primary Health Centre
PRA	Participatory Rural Appraisal

Exchange Rate Jan 1995

UK £ 1 = Rs. 48.50

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1. Introduction: Impregnated Mosquito Nets (IMNs) and the Problem of Sustainability

Margaret Thomas

Why convene a Round Table in the State of Orissa on the promotion of the use of Impregnated Mosquito-Nets (IMNs) and the problem of sustainability? The problem of deciding how mosquito-nets and impregnating fluid should be paid for is, at one level, simple, and, at another, enormously complex.

In the health sector (as in other sectors of the economy) opportunities exist to have the consumers of items they use pay for all or part of their cost through pricing mechanisms. Opportunities also exist to draw on other funding sources instead of or as well, including donors or more notably subsidies from government revenues raised from general taxation. Hard decisions have to be made about the appropriate combination of mechanisms and sources, taking into account considerations of efficiency and equity as well as other key factors such as overall national objectives, and requirements to assure the financial viability of local suppliers.

Economists would normally proceed in this situation by asking first, what is the strict efficiency price of the mosquito-net and the impregnating procedure and second, are there good reasons for departing from that price level? The typical reasons that would need to be scrutinized include: public-good or merit - good arguments and externalities (less malaria, fewer deaths, more output, higher productivity); potential high cost of arranging alternative distribution mechanisms; difficulties in arranging continuous and correct impregnation of nets; equity concerns regarding remote and difficult to reach populations, and the poorest people and so on. In some instances, perhaps amongst populations severely affected by malaria, this might lead to prices much lower than those prevailing in shops and markets in the State at the present time.

It is a big step from advice at this general level of economic principles to concrete practical recommendations on financing strategies for bed-nets in the varied circumstances encountered in Orissa State. At the second level - the practical level - the issues become immensely more difficult. How can one develop guidance to assist the planners in the State Department of Health and Family Welfare find their way through the myriads of possible combinations of different service provision and different circumstances?

This Round Table is a first step in attempting to bring together relevant experience on the current situation, and to draw conclusions as to whether an IMN project is worth pursuing.

2. Malaria Control as a Component of the Orissa Health and Family Welfare Project

Alison Dembo Rath

2.1 Background

The British ODA supported Orissa Health and Family Welfare Project commenced in 1980 with the objective of strengthening Primary Health Care (PHC) particularly in the area of Maternal and Child Health (MCH). Need for this support was evidenced by the State's high MCH indicators, in particular it's Infant Mortality Rate.

Malaria is a major public health problem in Orissa. It has 4% of India's population but but records 33% of all P. falciparum cases (the most serious type of malaria), and half the reported deaths due to malaria in the country. Malaria is particularly serious in the hilly areas, largely inhabited by tribal people who are poorly served by health services. One small study in such a "tribal block" suggests one third of all mortality is due to malaria. This is likely to be even higher in specific groups like pregnant women and children due to their increased vulnerability to the disease. The health of these people holds priority in ODA 's objectives. There is sufficient justification for addressing malaria control as part of an MCH Project.

The National Malaria Eradication Programme (NMEP) has been using residual insecticide spraying with DDT as the main method of control but resistance has developed in some vector species, it is difficult to cover the hill areas and community acceptance is poor. Alternative approaches need to be tried including the use of IMNs. IMNs would be promoted as a complementary intervention to chemoprophylaxis and chemotherapy, not as an alternative measure.

The efficacy of IMNs has been shown in a large number of trials in different parts of the world. There is good research and information available from India itself. It is unnecessary to set up yet another trial to test effectiveness. Rather the difficult problem is to find the most acceptable and economic way of getting people to use IMNs. One of the attractive aspects of IMNs is that they have the potential to transfer the means of malaria control to the level of families and communities and away from dependence on government.

The area identified for the project is Jangira Sector (30,000 population) of Harichandanpur block, Keonjhar district. Most of the people belong to the Juang tribal community. The recorded API is regularly above 200. The map (annex 12-4) shows the different districts in Orissa state.

Table 2.1

Orissa State: Annual Parasite Incidence (API) in the thirteen former districts of Orissa 1986-90

Districts	1986	1987	1988	1989	1990
Keonjhar	32 . 74	22.02	23.83	24.49	31.20
Phulbani	43 . 50	27.53	21.76	26.19	25.41
Sundargarh	27.55	20.87	19.92	26.55	25.50
Mayurbhanj	21.23	16.14	15.57	17.22	20.07
Dhenkanal	15.54	11.63	7.24	13.03	17.14
Koraput	14.28	13.48	12.50	14.36	12.79
Ganjam	13.26	8.33	7.09	9.97	10.66
Kalahandi	7.74	6.74	5.78	8.31	10.12
Sambalpur	11.66	9.55	4.85	6.22	5.62
Bolangir	11.14	5.07	2.43	3.90	5.31
Cuttack	0.81	0.32	0.33	0.35	13.83
Puri	2.97	3.20	2.30	2.82	2.55
Balasore	1.01	1.10	0.99	0.75	1.19

2.2 The Project Partners

Many different agencies have been involved in the preliminary discussions and planning of the IMN project.

The Department of Health and Family Welfare and the Panchayati Raj Department

Improved mother and child health is a common goal of the Department of Health and Family Welfare and the Panchayati Raj Department, through the Integrated Child Development Scheme (ICDS). The ICDS programme is implemented through Anganwadi workers (AWW).

- The National Malaria Eradication Programme

- The Department of Health and Family Welfare, Government of Orissa, implements the "Modified Plan of Operation" of the National Malaria Eradication Programme (NMEP) through its cadre of Multi-purpose Health Workers (MPHW) .

- Orissa Health and Family Welfare Project

The British Overseas Development Administration (ODA) supported Orissa Health and Family Welfare Project (OHFWP) acts as a catalyst for development of health services through the Department of Health and Family Welfare, Government of Orissa. OHFWP is committed to introducing new approaches to health care, aimed at improving the effectiveness and efficiency of the health system in Orissa. OHFWP is managed by British Council Division of the British High Commission (BCD) on behalf of ODA. For this project BCD is responsible for procurement of equipment and supplies, management and coordination of Indian and international consultants, liaison with Health Department officials and project monitoring.

- CARE - Orissa (NGO)

CARE provides supplementary food to children under six and to pregnant and lactating mothers through ICDS in nine districts of Orissa. CARE is implementing a Maternal Anaemia Control Project in Keonjhar District. One prong of their strategy for reduction of anaemia is through control of malaria using Impregnated Mosquito-Nets.

CARE offers expertise in training of government functionaries at the sector and village level. It has experience in Participatory Rural Appraisal (PRA) methods for design and implementation of activities with the community. For this project CARE is providing consultancy in demand generation for Impregnated Mosquito-Nets.

The Malaria Research Centre Field Station

The Malaria Research Centre Field Station (MRC) in Rourkela has already gained considerable experience in conducting impregnated bed-net trials in Sundargarh district of Orissa. MRC will provide technical support in the fields of entomology and epidemiology.

The UK Malaria Consortium

The Consortium offers advice on malaria control to governments in affected regions.

Co-ordination

This project affords the opportunity for two Departments with a shared goal to work together, and to draw on the complementary assistance of two donor agencies. Activities will also be coordinated with the UNICEF supported NMEP project in Keonjhar District.

Note

The Panchayati Raj Acts (1992)

These Acts provide for the establishment of Panchayat at village, intermediate and district level (local elected bodies with powers and authorities in rural areas). Responsibilities include:

- i) poverty alleviations ii) welfare of weaker members of society iii) health and water supply and sanitation iv) family welfare

3. Getting IMNs to the People: Who can contribute?

Alison Dembo Rath and Margaret Thomas

3.1 The main actors in the villages

The purpose of the OHFW project is to encourage families to purchase, use and maintain impregnated mosquito-nets. This sounds simple, but when we in government, CARE and British Council sat down to think about how we would actually go about it, we realised the complexity of this task.

The evidence is that the people who live in the most malarious regions of Orissa are those least able to afford to purchase mosquito nets. Further, awareness about malaria prevention may be slight, a reflection of overall low education levels. The consequent lack of demand for mosquito nets means they are not currently available in the smaller local market places. The impregnation fluid is a new product in India and is not yet sold in the shops.

To achieve our purpose, nets and impregnation fluid have to be made available at a price people can afford to pay; the desire to buy must be created ; they have to be made available in the local shops or other outlets ; initial advice on hanging the net will need to be given; and re-impregnation taught on a household or community basis.

We listed (below) some of the different agencies or actors who are already present in the villages, and considered who could play what part in getting impregnated mosquito nets to the people.

Table 3.1 Potential Actors in the Promotion of IMNs

ACTORS	SOURCE OF FINANCE	PROMOTION OF CONCEPT		SUPPLY		PROMOTION OF USE	MAINTENANCE
		H.E	MARKETING	NETS	FLUID		
GOVT.	GOVT.	Yes		Yes		Yes	Yes
NGOs	DONOR	Yes		Yes		Yes	Yes
	GOVT/SELF						
MM/MSS	GOI/WB	Yes		Yes	Yes	Yes	Yes
COMMERCIAL	SELF	Yes	Yes	Yes	Yes	Yes	Yes

MM : Mahila Mandal

MSS : Mahila Swastya Samiti

Women's organisations

HE : Health Education

WB : World Bank

Promotion of concept: Mosquito nets are hardly in evidence outside of Keonjhar town. For promoting the concept of impregnated mosquito nets we differentiated between health education as carried out by government workers, NGOs and women's groups, and marketing strategies employed by the commercial sector. We initially left a blank against health education by the commercial sector, but in discussion at the Round Table we agreed that manufacturers and retailers of both nets and impregnation fluid both could, and should, have a role to play in health education. The presentation on marketing and social marketing at the Round Table, where we learnt that marketing "is a process undertaken to change people's behaviour", led many of us to the conclusion that in this context the boundaries between health education and marketing are blurred and all the actors have a role to play in both aspects of concept promotion.

Supply: Although our intention is to promote an IMN as a single product, supply of the mosquito net and impregnation fluid poses quite different problems. Mosquito nets are a high cost, "one off" investment (nets may last for 6 years). They are already available in the major centres in the District and will be familiar to many people. The task for nets is to make them available in smaller centres at a price people are willing and able to pay. All the actors, local traders, NGOs, women's organisations and government workers, can play an important part in this.

The impregnation fluid, on the other hand, will present a recurring cost to the family every 6-12 months. Like any other insecticide, the concentrated fluid needs safe packaging and has to be handled with care. At this stage we are still not sure how best to supply the fluid to the people, and will be considering different options in discussion with the community and the manufacturer.

Promotion of use and maintenance: This covers helping people initially to hang the nets correctly (inside or outside their houses) so that people can sleep comfortably and protected under the net and away from hazards such as open cooking fires; advice on storing the nets (away from pests such as rats) ; washing; and later re-impregnation. All the agencies, other perhaps than the commercial sector are likely to play an important part in these tasks.

3.2 The question of Ability and willingness to pay

In India as in many other less developed countries (LDCs), the Government has, in the past, provided most of the resources for the health care system. Subsidies for medical education, capital for government run hospitals, subsidised drugs and free services in clinics and hospitals have been the rule rather than the exception. While resources were always short, this position

was exacerbated by the global recession of the 1980s. Faced with severe imbalances in their economies, many LDCs including India have started structural adjustment programmes under the auspices of the IMF and the World Bank. A typical adjustment package includes tight fiscal and monetary restraints and usually results in a significant fall in domestic output, real wages and private consumption. Where the health care system suffers from lack of resources, one answer has been to ask the consumer to pay a larger share of the cost. Donors have also been approached for increased assistance, not always with success.

The feasibility and desirability of raising revenue from users for IMNs in Orissa State depend on the price sensitivity of demand for IMNs. There are three issues to be resolved, and a questionnaire designed by BCD, CARE-Orissa and the health economist will help to find answers to some important questions:

- i) How price elastic is the demand for IMNs? If small changes would greatly reduce potential utilisation and the amount of revenue raised would be small, perhaps the revenue is too small to justify the policy.
- ii) Is the demand for IMNs more or less price sensitive for some groups rather than others? Some questions on economic status are to be linked to potential use to establish this.
- iii) The desirability of expanding the use of IMNs depends on the extent to which their use improves health status. There is sufficient research to show that use of IMNs is efficacious.

The first part of the project will be devoted to answering the first two questions by using a questionnaire directed at a statistical sample of people living in Janghira Sector (see annex 12.3). Findings from other studies undertaken elsewhere in the world are:

- The demand for health care and intervention is price sensitive.
- The poor are more price sensitive than the rich
- Demand for care for children is more price elastic than care for adults.

The answers from the people of Janghira sector will guide the selective introduction of modest charges followed by a careful evaluation of the resulting take-up of IMNs.

4. IMNs: The Problem of Sustainability

Margaret Thomas

The 1990s present a challenging and complex environment for those who lead the battle against malaria.

First I would like to identify several key matters which influence the effort to create a sustainable IMN programme that will last in the future.

1. Being part of National and State Level Strategies:

From the outset, it is important that the mosquito-net programme is seen as part of a national/state strategy. It should not be a separate or distinct activity associated with a particular group of people. Whoever turns out to be involved (the Government, NGO or private provider) there is need to develop integrated, complementary and efficient strategies.

2. Recognizing a Complex Donor Environment:

In the long run, any financial projection would show that there are insufficient donor resources to provide comprehensive IMN coverage for the growing population in Orissa State. In Table 4.1, external aid to India is shown in the first quarter of 1994-95 and is compared with the first quarter of 1993-94. Assistance declined from 1430 crore in 1993-94 (quarter 1) to 1187 crore in 1994-95 (quarter 1). Moreover when repayment of loan and interest payments are added together, it can be seen that in 1994-95 there was a net out-flow of funds of 1033 crore. This is a picture that is unlikely to change in the short term.

Table 4.1 EXTERNAL AID TO INDIA FIRST QUARTERS OF 1993-94 & 1994-95 (CRORE)

	1993 - 1994	1994 - 1995
Loans	1,018	958
Grants	125	54
Non - Govt. Loans	287	175
Total	1,430	1,187

Source : Govt. of India, Ministry of Finance
Monthly Economic Report covering
April - June 1994 - 95.

The comment is made in the Economic Report that the net aid outflow amounted to Rs. 1,033 crore.

Repayment of principal Rs. 1241 crore

Interest payments Rs. 979 crore

Rs. 2220 crore

Rs. 2220 crore - Rs. 1187 crores = Rs. 1033 crore.

Right from the start, therefore, it is important to emphasize financial sustainability in the effort to increase access and coverage of poor populations. It is also important to identify the items that may be only forthcoming through donors: e.g; technical assistance, insecticides, training.

3. Documenting the Effectiveness of IMNs in the Fight Against Malaria:

Any success with the IMN programme in Orissa may lead to a desire to replicate a programme both within the State and within the country. It is important from the start to have a clear picture of costs, a clear picture of effectiveness and good documentation of managerial and financial procedures. The particular role of IMNs is any reduction in malaria deaths or prevalence needs careful documentation.

4. Ensuring Correct Use of Technology:

The introduction of IMNs in an area requires a project director to adapt and respond to the service delivery approaches and techniques. What is feasible to provide and at what price. What type of net, what type of fluids?

5. Employing Social Marketing Research in Decision-Making:

Some of the methods are already well-established in the commercial setting, but particularly:

- (i) the sample marketing questionnaire
- (ii) the focus group discussion
- (iii) the retail audit

all have a place in IMN activity. The findings and recommendations form the base for the design of marketing strategies.

Now to turn to the question of Sustainability:

The Financial Picture:

How money is raised, how money is spent and how a programme is organised all have a critical impact on long-term viability.

In figure 4.1 are shown the possible sources of finance for an IMN project: the international sources and the national sources. It is likely that the final financing package could involve several actors, as Alison Dembo Rath showed in Table 3.1. At the bottom of the figure 4.1 I have added in a box for good fund management: if resources are made available it is important that they are managed well.

Figure 4.1

Sources of Financing for IMN Programmes

Financing: International Sources

Bilateral Agencies

Multinational Agencies

Nongovernmental Agencies
Intl. voluntary Organizations
Foundations
Technical support
NGOs

Financing: National Sources

Government	
National	Grants
State	Indirect
Local	Subsidis
	Facilitles
	Equipment

Beneficiaries
Payments for Service
Membership feeds

Private Sources
Foundations
Intermediary NGOs
Business contributions
Sales of other products, services
Direct fund raising
Membership fees
Volunteers

Third - Party Payers
Government
Business
Insurance

Good Fund Management

Some key factors and practices that have arisen in successful projects that it is useful to highlight.

1. **Joint Public/Private Sector Collaboration:**

Whereas in the past, the public and private sectors stood apart, today, collaboration is seen as important to avoid wasteful duplication, and to attempt to reach the poorest/high risk populations.

Some of the techniques used successfully in PHC programmes include:

- (a) Cross-subsidies
- (b) Strong community participation to monitor performance and assist in defining who should receive items free
- (c) Sliding-scale pricing strategies for different groups
- (d) Service agreements with employers in relation to employees (cutting down on production/productivity losses).

2. **Strong Financial Management Control Systems - the use of a Business Plan:**

From the start good accounting practices and control systems are pre-requisites to sustainable programmes.

3. **Careful Attention to Costs:**

The largest cost in establishing an IMN programme will be personnel and supplies. Keeping a tight rein on these costs and always seeking a flexible approach is very important.

- Which services are best done by others?
- Which special services are best contracted out?
- Have part-time personnel a role?
- Can bonuses reflect efficiency and quality standards?

4. **Rapid and Accurate Feedback to Managers on Financial Performance:**

Programme managers need to know what their costs are and how they are doing on a regular and timely basis. Reports that compare performance of different teams and



different approaches can be highly effective.

5. **Balance of Service and Financial Goals:**

Is too much emphasis being placed in the last 3 sections on financial goals? PHC projects have found that financial stability is closely tied to high quality service delivery; the corollary is true also. Lack of financial stability is closely aligned to poor quality delivery. Financial and service targets should be married together - one is not met at the expense of the other.

6. **Incentive Compensation Schemes:**

A tool, which can be useful, although not easy to design, is to provide incentive compensation to motivate staff to be productive and perform their work well.

7. **Simple Models for Projecting Levels of Financial Sustainability:**

Simple models that predict revenue and costs by type of service centre based on past records can be enormously helpful to managers.

8. **Financing Strategies that Combine Cost-Containment and Revenue Generation:**

It is always critical to look at project design that keeps costs low and at the same time generates revenue. Long term sustainability needs both costs and revenue generation considered together.

This is an early stage of the work. Our greatest interest today is:

1. To meet, as interested parties.
2. To have regard to this question of sustainability -
first from an efficiency perspective
second from an equity perspective.



Seven questions need answering in the project design:

1. Who is the producer of nets and fluids?
2. Who are the potential purchasers and what needs and wants do these people have?
3. What specific product can the manufacturer design to help fulfil these needs?
4. What price must purchasers pay to obtain the product?
5. How can the producer promote (communicate with) the given market?
6. Which parties will participate in making the products available at the best time and in the best place (Government, NGOs and retailers, employers, community groups).
7. What probing and questioning is necessary to evaluate a marketing campaign and to obtain feedback and experience for the future?

Today we try to pool our information and our brain-power to lay some foundation stones for the work.

5. Government Expenditure on Malaria Control Activities

Dr. B.K.Prusty

The National Malaria Eradication Programme (NMEP) is a centrally sponsored scheme, that is, financed 50% by the Central Government and 50% by State Government. The Central Government's contribution is in the form of 'kind' (chloroquine tablets; insecticide spray) and the State Government pays the salaries of the workers and the other recurrent costs such as fuel for transportation.

Table 5.1 Spraying Budget, Monies Received and annual Dates of Expenditure Sanctions: Orissa State

YEAR	SPRAYING BUDGET (SALARY COSTS ONLY) NEEDED LAKHS OF RUPEES	ACTUAL GOVT. SANCTION RECEIVED (LAKHS OF RUPEES)	RECEIPTS OF MONIES
1990-91	71.55	29.58	1.5.90
1991-92	130.00	52.86	25.4.91 & 15.10.91
1992-93	130.00	65.00	2.5.92 & 31.10.92
1993-94	150.00	52.50	21.5.93 & 13.9.93
1994-95	65.00	15.00	21.4.94 & 1.7.94

Source: Annual Plan 1994-95

It can be seen that:

- * The amount sanctioned is inadequate
- * Money is not released in time for spray to be effective.
(i.e.; to complete spraying before the rainy season begins in June.)

The results of these financial constraints can be seen in table 5.3.

Table 5.2

Population of Orissa: Percentage in need of spraying, and percentage receiving spraying programme.

Year	% in need of spraying	% actually sprayed
1990-91	87	39
1991-92	79	26
1992-93	91	26

The percentage of the population in need of spraying is compared with the percentage actually covered. The situation is seen to be deteriorating year by year.

Clearly, the impact of the Government spray programme on malaria control in the State is very limited.

It has also to be acknowledged that many people in Orissa were un-enthusiastic about spraying of their houses with DDT. Resistance to spraying of sleeping places was frequently encountered. People knew from radio and TV that DDT was banned from use in agriculture in many countries. This has created disquiet about the use of DDT.

Two further points need to be made:

1. Quoted death rates from malaria:

It is widely believed that death rates are considerably higher than the Government figures. Many cases remain undiagnosed, death rates were calculated from the figures submitted by PHC centres and hospitals. Deaths at home were under-represented.

2. Under staffing of malaria programmes.

About 50% only of the sections have the full complement of staff. Inevitably this meant that fewer anti-malaria activities were undertaken.

6. Experience from the IMN trial in Mining Settlements in Sundargarh district, Orissa State.

Mr. M. A. Haque

6.1 Background

Orissa State has vast resources of ferrous and non-ferrous metals. About a dozen are exploited commercially. Sundargarh district in the north west part of the state has many operational mines of ores like iron, manganese, limestone and dolomite. The mines are open-cast and several thousand labourers are employed. The mines are in forested hilly terrain intersected by a network of perennial streams which maintain mosquitogenic conditions.

Special studies have been undertaken at Barsuan and Kalta mines about 100 km south of Rourkela. Nearly 14,000 people live in the settlements; Kalta mine has one main and two nearby settlements. Barsuan mine has two settlements. The expenditure incurred on malaria treatment and malaria control has been estimated as well as the losses that accrue to individual patients. The heads used for the calculations are:

- i) Actual expenditure by hospitals on treatment, drugs, diet, ambulance.
- ii) Expenditure on anti-larval and residual spray operations
- iii) Expenditure by private contractors on malaria sufferers.
- iv) Days lost through sickness and debility - these were calculated as follows:
 - a) Days spent by indoor malaria patients during hospitalisation and subsequent rest were counted.
 - b) One third were excluded (non-working age groups). Of the remainder some 43% were identified as malaria cases.

It was found that, on average, 5 days per case were lost due to malaria.

A monetary estimate could be made on the basis of Rs. 50 per day for mine employees and Rs. 17 per day for other persons.

While it was not possible to estimate the monetary loss caused by malaria in the community in absolute terms (loss of human life, debility etc), the annual expenditure/loss was estimated at Rs. 80 per capita per year.

6.2 The Mosquito-Net Trial

The trial was conducted by the Malaria Research Centre, Rourkela in the mining area of Sundargarh district. The area selected for the study has a high mosquitogenic potential and the breeding places are mostly perennial hill streams and seepage pools. The major malaria vector of the area is An. fluviatilis, supported marginally by An. culicifacies. An. fluviatilis is a very efficient vector and has a highly anthrophilic nature.

Mosquito nets treated with cyfluthrin were provided free of cost in three townships close to the mines. About 4000 local labourers and their families live in the township. Some 11,726 population had access to mosquito nets in May 1992 and another 2920 population were kept without nets for comparison purposes. The mosquito nets were re-impregnated every 6 months.

Regarding the quality of the nets : the sizes used were small and the quality was described as "not good".

Treated nets provided excellent protection from the bites of An. fluviatilis as well as causing a significant reduction in the density of An. fluviatilis and An. culicifacies. This resulted in a significant reduction in malaria incidence and slide positivity rate.

A remarkable impact was also observed on the bed occupancy due to malaria in the two mining hospitals. Expenditure and economic loss due to wages was reduced.

Health education was given through group meetings, video shows, exhibitions and writing wall slogans. This generated awareness among people about the programme and ensured better compliance of bed net usage. A Sleeping Pattern Survey was conducted to see the percentage of people really using the nets. In general it is observed that the strategy is accepted by the inhabitants of the area very well.

7. Lessons from Contraceptive Social Marketing

Mr. S. S. Modkar

Introduction

Considerable experience is available to the OHFWP project from the experience of social marketing of contraceptives in India. The main features of marketing and social marketing are described:

7.1 What is Marketing?

MARKETING IS A PROCESS UNDERTAKEN TO CHANGE PEOPLE'S BEHAVIOUR

" Marketing is the design, implementation and control of programmes, seeking to increase the acceptability of an idea, practice or product, by the target group." (Kotler)

This means:

- doing research to find what people want
- creating the product and service that people want
- pricing the item competitively
- and making it easy for people to obtain it.

Which involves:

- Market and Consumer Research by doing :
 - # Focus group interview # Market segmentation study # Target group analysis
- Product Development & Testing :
 - # Product positioning # Creative strategy # Message design
 - # Message testing # Media strategy and planning
 - # Effectiveness tracking
- Sales & Distribution :
 - # Dealer loading # Sales promotion devices
- Tracking Research

Consumer marketing is involved with selling consumer goods and services for profit.

7.2 If this is marketing, what is Social Marketing?

Social marketing :

Predisposing people towards
and
making available to them
practices, goods & services affecting
their basic welfare

Social marketing requires
all
the skills of consumer marketing
because of three fundamental similarities :

- i) Both have to affect attitudes and behaviour
- ii) Both have to make what is offered available, within easy reach
- iii) Goods must be promoted at prices the target consumer considers reasonable.
This price can sometimes be zero.

There are five fundamental differences between Commercial and Social Marketing :

- 1. In OBJECTIVES : Profit Vs. Welfare
- 2. In PROCESS :
Consumer Marketing Mostly Needs to Sell Brands,
Sometimes Products, Rarely Concepts/Practices

Vs.

SOCIAL MARKETING Mostly Needs to sell concepts/
practices, sometimes Products, Rarely Brands.



3. In TARGET POPULATION :

CONSUMER MARKETING

Mainly Better-off Sections of community

Usually Direct Consumer approach
Vs.

SOCIAL MARKETING :

Needier Sections

Providers/Influencers Apart
From Consumers

4. In SOCIOLOGICAL TERMS :

Consumer Marketing, Rarely Affects Basic Community Welfare

which

SOCIAL MARKETING DOES

5. In COOPERATION WITH GOVT.

CONSUMER MARKETING Need Not/Should Not Have Much To Do With Government

whilst

SOCIAL MARKETING Has To Work In Close concert With Government Towards
National Priorities

7.3 The Role of the Media

Table 7.1 RURAL REACH OF MASS MEDIA 1981

MEDIA	% REACH AMONG			
	LANDLESS LABOUR	MARGINAL LABOUR	SMALL FARMERS	OTHER FARMERS
NEWSPAPERS	7	23	38	37
MAGAZINES	3	9	17	22
RADIO (PRIMARY CHANNELS)	46	41	63	59
RADIO (COMMERCIAL CHANNELS)	13	16	27	29
CINEMA	12	30	33	27

SOURCE : "THE RURAL MARKET" CLARION ADVERTIZING SERVICES 1981

Television has increased the rural reach amongst the better off groups since 1981.

7.2 RURAL SHARE OF MAJOR CONSUMER GOODS SALES

Products	% Rural Share
Analgesics	50
Razor Blades	48
Washing Soaps	47
Toilet Soaps	45
Packaged Tea	40
Batteries	40
Optical Whiteners/Blues	35
Detergent Cake/Bars	29

SOURCE : OPERATIONS RESEARCH GROUP (ORG)
RETAIL SHOP AUDIT

7.4 Bringing about changes in attitude

- Widespread change of attitudes/behaviour only possible with deep community involvement and participation.

- Both not possible without fullest use of media/distribution channels/ international communication.

7.5 The many faces of Social Marketing

Subsidised contraceptive marketing is often regarded as the first social marketing operation. But in promotion of ideas for basic welfare, social marketing has an ancient and distinguished lineage , e.g; great religious and political movements. On a Practical level, India's " green revolution" is arguably the worlds most spectacular social marketing operation. In 30 years it changed knowledge, attitudes and behaviour which had been traditional for centuries. It succeeded in selling new concepts, practices and products - mainly through an army of extension workers. At the simplest level fair price ration shops is an excellent example of social marketing.

7.6 EXPERIENCE OF SOCIAL MARKETING IN HEALTH, FAMILY AND SOCIAL WELFARE

- Oral therapy for home management of diarrhoea, mainly through concepts and practices, but also product like "ORS".
- Immunization : Basically concepts & practices
- Safe delivery : Practice/Product (TBA Kits)
- Growth monitoring : Concept/Practice
- Nutrition education : Mainly Concept & Practice, Sometime Products (Nutritional Supplements)
- Iodised salt for iodine deficiency diseases : Concept/Practice/Product
- Malaria control : Mainly Concept & Practice
- Contraceptives : 71 million condoms sold in india last year.

7.7 Key concerns in Social Marketing

Two crucial operations often neglected even by major marketing companies :

- Market Research
 - Baseline / Impact Research to establish and plot changes in knowledge/attitudes/ practices (K A P)
 - Operations Research (OR) to identify difficulties & increase efficiency
- Pilot/Test Marketing
 - To avoid expensive/irreparable errors

The importance of these two operations run through every aspect of logistics & communication.

7.7 Two words of caution

- * **Cost can kill** : though profit is not one of social marketing's objectives, costs can not be ignored, e.g; Excessive subsidies can kill programmes, precisely because success can mean unbearable permanent costs. So gradually adjust prices to progressively reduce real subsidy.
- * **Social marketing is double edged** : Well done, social marketing raises and fulfills proper expectations. Badly done, it disappoints, and creates ill feelings.

8. Impregnation Fluids: Supply, cost and toxicity

Dr. C. J. Babu

The fluid

Natural pyrethroid is derived from chrysanthemum flowers and has long been known to hold insect repellent properties. Pyrethroid has also been available as a synthetic product for many years and is a familiar product in mosquito repellents such as heated mats. However this is an unstable form of the compound and as such will not remain on the surface of materials. Only more recently has a stable form been developed, allowing impregnation of material such as mosquito-nets. These will remain effective in use for many months. The first such stable pyrethroid was permethrin. A subsequent version is known as deltamethrin, which it is planned to use in OHFW Project.

Supply

Deltamethrin is manufactured by Roussel-Uclaf under the trade name K-Othrine. At the time of writing this report K-Otherine flow formulation has become available manufactured in Bombay by Hoescht India Ltd.

Cost

One single net has an area of approximately 10 sq metres for which 10 mls of fluid are needed. The fluid costs Rs 800 per litre, giving a cost per each impregnation of a single net of Rs 8. Nets should be re-impregnated every 6-12 months.

Frequent washing of the net will necessitate more frequent re-impregnations. Soot and smoke do not reduce the effectiveness of the impregnated net. A net will last 3-5 years depending on the material type/i.e; cotton or nylon and quality. The impregnated mosquito net also protects against cockroaches, lice, bed bugs & house flies.

Toxicity

Deltamethrin is biodegradable in the soil. It is rapidly degraded in warm blooded animals including man. Further only a very small quantity of active ingredient is required per a square metre so that exposure is very low.

The major concern appears to be toxicity for fish. Excess fluid should not be poured into fish ponds or streams but poured on to soil. Skin irritation problems in humans have been found to be transient. Instructions regarding use are that gloves should be used in the dipping process if community nets are to be dipped in mass and the mosquito net should be dried in a shady area (not direct sunlight). It should be used only when completely dry.



9. The Mosquito Net trade in Bhubaneswar

Mr. Tajinder Singh

Mr Tajinder Singh presented a variety of ready made nets and net material and described their characteristics.

9.1 Places of Manufacture of Mosquito Net Material

Mosquito net material is not produced in Orissa. There are three major centres of manufacture in India:

1. South India (Calicut, Salem and Coimbatore): Cheaper varieties of net material in both cotton and nylon are made here.
2. Western India (Ahmedabad): Produces the best quality cotton nets (mainly Tata textiles).
3. North India (Amritsar): Source of high quality nylon nets.

9.2 Sewing of Mosquito Nets

Kalamandir Department Store in Bhubaneswar trades as a high quality shop. Mr. Singh said he ordered nylon net of high quality from Amritsar and this was delivered in 600 m bales. The retail price was Rs. 25 per metre, for this high quality material .

He usually directed customers to local tailors to have their nets made up. If the store made the net it attracted 12% sales tax as a ready made item. Approximate prices were:

8 metres material @ Rs. 25 = Rs. 200 for a 3'3" x 6' 6" net (a 12" fabric tuck-in and a 2" roof allowance and tapes gave average price of Rs. 290 (single) Rs. 410 (double) when finished).

9.3 Price range

Mr. Singh showed the Round Table members a variety of nets, different qualities and materials.

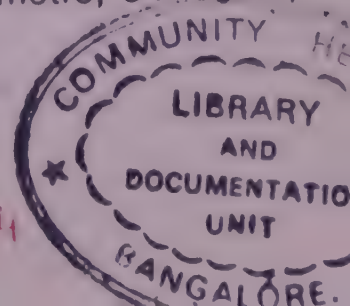
- "Roadside quality" cotton: Rs 48 single (6 ft x 3 ft), Rs 65 double
- This had no border 'tuck-in' and was likely to shrink.
- Slightly better nylon: Rs 70 single, Rs 85 double
- This was a highly inflammable net.

- Cotton Tata Net : Rs 125 single Ready made
Rs 180 double

- Bought ready made from whole-sales in Calcutta

- Tata Cotton Net material with square holes : Rs 17.50 per metre, 54" width, good quality

- Amritsar Nylon material: Rs 25 per metre





- single 6' 6 "x 3' 3 " = Rs 290
- double 6' 6" x 6' 3" = Rs 410

Mr. Singh pointed out that social groups A-C are reluctant to use the cheapest quality mosquito net. Groups D-E do not use nets because of poverty.

9.4 Durability

Nylon nets (at least good quality ones) are more durable than cotton. However they are also more inflammable, which may be an important consideration if they are hung in the same room and near the cooking fire.

9.5 A suggested procedures for marketing subsidised nets

1. Identify an outlet in the village/nearest market place. This will be a small trader who is unlikely to be stocking mosquito nets or material.
2. If the buying price per net for the customer has been set at Rs 40, supply nets to the trader at Rs 32. This will give him an incentive of 25% profit per net sold.
3. For monitoring purposes the trader should keep a record of the name and address of the persons to whom he has sold nets. A sample of these can be followed up to reduce the risk that the trader may create a list of fictitious customers and sell the nets at a higher profit elsewhere. Other checking systems can be introduced such as "mystery buyers".
4. Consumer awareness is a powerful tool to ensure the right product is provided at the right price. The marketing strategy can include audio announcements by auto rickshaw (or bicycle), informing people which are the outlets for the 'special nets' and the price at which they are sold.
5. There is a danger that providing subsidised mosquito nets will adversely affect the usual net trade in the district (by forcing a fall in price). This can be limited by restricting supply of subsidised nets to a few outlets in the project area. From background work it is known that nets are not currently sold in this area.
6. An alternative, or addition to the private retail trade is to supply nets through the Government Cooperative stores. These are present in all subdivisional towns and stock items such as oil and soap. The advantage of this is that they already have a central distribution system in place. The disadvantage is these tend to be associated with low quality products, which might mar the attractiveness of impregnated mosquito nets. Both systems can be tried on a "experimental" basis.
7. Another option would be to make nets available through the Anganwadi centres. The Anganwadi workers could purchase nets from traders in the district headquarters (with funds from the donor agency) and sell these at a subsidised price. The advantage of this system is that the Anganwadi worker knows her client group so leakage of subsidised nets into the general market place is less likely.

10. **Designing a Base-Line Questionnaire to establish demand for and ability and willingness to pay for IMNs**

Mr. S. B. Saha

The CARE-India and CARE-Orissa officials had worked with the health economist, and BCD, to determine what information really needed to be gathered from the sample of people to be questioned in Janghira Sector, Keonjhar district. Two CARE officials and the economist had spent some time in Janghira talking to tribal peoples, government officials and NGOs.

Today there was the opportunity to present to the Round Table the questionnaire compiled by the team which would enable decisions to be made about user charges. Above all else there was felt to be a need for directness and simplicity in the questionnaire. The draft questionnaire is available in this document (see Appendix 12.3). Below are the main heads on which the team felt information should be sought. Current usage of IMNs in the tribal areas is negligible.

Information to be gathered:

1. **FAMILY BACKGROUND INFORMATION :**

- Type of community
- Age, sex, education, occupation (matrix)
- Type of family
- Type of house
- Number Of rooms
- Land holding size

2. **Malaria sickness, cost and economic losses**

- Past experiences (awareness) - Signs
 - How did you know you had Malaria | Causes
 - How did you get sick | Action
 - What action did you take - Preventive Measures
- Money spent (transport/prescription/medicine)
- Days lost (sickness)
- Wages lost

3. **Attitude towards Mosquito Nets**

- Do you have mosquito-nets ?
- Type/size
- Who sleeps under it/them?
- Use of nets and by seasonal pattern



4. **Willingness and ability to pay**

- Attitude towards buying a net
- Amount willing to pay
- Payment by season
- Payment in installment
- Total amount
- Re-impregnation - Amount willing to pay

Qualitative Information

A. Case studies of mosquito-net user

- ☐ When & from where purchased
- ☐ How much paid
- ☐ How to hang the net
- ☐ How often net washed
- ☐ Where it is washed

b. FGD (Focus Group Discussion)
(Separate men and women's group)

- Work and Income pattern
- Income pattern by season
- Spending pattern
- Sickness pattern
- Malaria control promotion in villages
- Spraying
- District chloroquine distribution
- Traditional methods of malaria control

Next steps

After the draft questionnaire has been pre-tested (Oct-December 1994) it will be revised prior to use in Janghira Sector. It may be suitable for use as a questionnaire in other tribal areas of Orissa State.

11. Conclusions of the Round Table Conference

The Round Table drew the following conclusions from the day's presentations and discussions:

1. Acceptability:

1. The Impregnated Mosquito Net (IMN) project is an initiative worth pursuing.
2. Considerable effort will be needed in relation to education and mobilisation of the target population.
3. Creating the desire for a product and making the product available, "within arm's reach" must coincide. The right succession of events would be
 - Questionnaire to establish demand/price
 - Results, if favourable, leading to detailed planning and implementation
 - Launch of IMNs.
4. A pilot campaign in one or two selected areas would seem sensible.
5. The importance of the role of community leaders/health workers needs to be stressed.

2. Affordability

1. The framework of economic operation in India has altered. Cost recovery is part of the national agenda.
2. The IMN should not be distributed free of charge.
3. If successfully launched, the priced and sold IMN sales figures would be a measure of usage.
4. Potential purchasers need to be reminded of their current costs of treatment and the economic losses they suffer.

3. Sustainability

1. Sustainability was a difficult word to interpret. It seemed to be used in 2 ways
 - A totally self-financing activity
 - A product or process worth ongoing publicly subsidy.
2. The supply of IMNs in rural Orissa was not seen to have the potential to become a totally self-financing project. Continuing public subsidy would be necessary, the amount to be decided. A "Social Marketing" approach was the preferred route.

12. ANNEXES

12.1 Programme of the Round Table Conference

12.2 List of Round Table Participants

12.3 The Base-Line Questionnaire

12.4 Map of Orissa

Annexe 12.1

PROGRAMME OF THE ROUND TABLE CONFERENCE-12 SEPTEMBER 1994

SUSTAINABILITY OF SUPPLY OF IMPREGNATED MOSQUITO - NETs (IMNs)

9.30 - 9.45	Welcome & Introduction	Alison Dembo Rath, Health Officer British Council Division
9.45 - 10.30	Impregnated Mosquito-Nets: The Problem of Sustainability	Margaret Thomas Consultant Health Economist, Malaria Consortium, London SHTM
10.30 - 10.45	Coffee Break	
10.45 - 11.30	Government Expenditure on Malaria Control activities	Dr. B.K. Prusty, Joint Director Public Health
11.30 - 12.00	Experience from IMN trial in Mining Settlement in, Sundargarh District, Orissa State	Mr. Haque, Malaria Research Centre, Field station Rourkela
12.00 - 12.45	Lessons from Social Marketing of Contraceptives in India & Orissa State	Mr. S.S.Modkar, Population Services International, Delhi

Lunch 1.30 - 2.30

14.00 - 14.30	Impregnation fluids : supply, cost & toxicity	Dr. C.J.Babu, Tech. Mgr Roussel (India)
14.30 - 15.00	The Mosquito Net Trade in Bhubaneswar	Mr. Tajinder Singh Kalamandir Dept. store
15.00 - 15.15	Tea	
15.15 - 15.45	Designing a Base - Line Questionnaire to establish demand, ability and willingness to pay for IMNs	Mr. S.B.Saha, Head, PHC Unit CARE (Orissa)

15.45 - 16.45 Plenary Discussion

Each Session will be a presentation followed by question and discussion.

Annexe 12.2

List of Round Table Participants

Government of Orissa

1. Dr.B.K.Prusty, Jt.Director Public Health
2. Dr.P.K.Das, Chief District Medical Officer Keonjhar
3. Dr.Hrushikesh Mishra, District Malaria Officer, Keonjhar
4. Dr.Sadashib Acharya, Medical Officer, Bhagamunda PHC, Keonjhar

Area Development Programme

5. Dr.K.S.Ganeshan, IAS, Project Director, Area Development Programme.

Regional Office for Health and Family Welfare, Government of India

6. Dr.S.K.Satpathy, Director

CARE Orissa

7. Mr.S.B.Saha, Head PHC unit.
8. Mr.G.S.Raghavan, Administrator

CARE India

9. Mr.Philip Viegas, Evaluation

Regional Medical Research Centre

10. Dr.A.P.Dash, Head of Medical Entomology and Parasitology

Roussel India Limited

11. Dr.C.J.Babu, Technical Manager

Malaria Research Centre, Rourkela

12. Mr.M.A.Haque, Research Officer

Population Services International

13. Mr.S.S.Modkar, Director Sales and Training
14. Mr.Khulbusan Jain, Area Sales Manager
15. Mr.S.P.Mohanty

OHFWP Management Office (British Council Division)

16. Ms.Alison Dembo Rath, Health Officer
17. Dr.Gordon McLaren, Health Officer
18. Mrs.Prativa Mishra, Social Development Officer
19. Dr.V.Pillai, Health Adviser
20. Ms. Margaret Thomas, Consultant Health Economist,
Malaria Consortium, London School of Hygiene and Tropical Medicine.

Prominent Retail Merchant, Bhubaneswar

21. Mr.Tajinder Singh, Kalamandir, Department Store

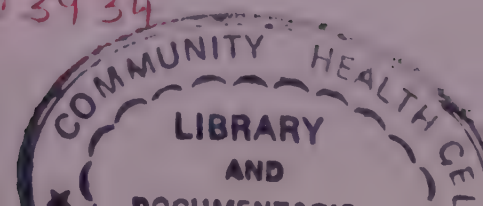
Annexe 12.3

The Base Line Questionnaire

7

DIS 317
N95

03934



BRITISH COUNCIL DIVISION & CARE COLLABORATED
COMMUNITY FINANCING OF
IMPREGNATED MOSQUITO-NETS PROJECT
 BASELINE SURVEY QUESTIONNAIRE
 ORISSA STATE - INDIA, 1994

INTRODUCTION :

Namaskar, My name _____ I have come from CARE Orissa. CARE is an organisation which works with ICDS in implementing health and nutrition programmes for children and mothers. I have come to talk about your experience with Malarial problem and its preventing and controlling measures in your village. Your answers will be useful in planning a new programme against malaria. Please spare some of your valuable time to help us in this regard.

Name of respondent : _____

Name of Head of household : _____

Investigator : _____

Interviewer's Visit Dates 1. _____ 2. _____ 3. _____

Language of Interview : _____

I. IDENTIFICATION

1.1 Respondent's serial No. : _____ 1-3

1.2 Name of ICDS Block : _____ 4

1.3 Name of ICDS Sector : _____ 5

1.4 Name of Sub-centre village : _____ 6

1.5 Name of AW Centre : _____ 7-8

1.6 Type of sample :

CIRCLE ONE 1. Original 2. Substitute

9

Reasons for substitution : _____

1.7 Season of interview :

10

1.8

	FIELD EDITED BY	OFFICE EDITED BY	CASE STUDY	
NAME			YES	
DATE			NO	

II. FAMILY BACKGROUND INFORMATION

II. 1 Caste :

Circle one

11

1. Scheduled tribe : GO TO II. 2

2. Scheduled caste

3. General

GO TO II.3

II.2 If Scheduled tribe, please specify :

12

II.3 Family type

CIRCLE ONE

13

1. Nuclear

2. Joint

II.4 Household data (PLEASE WRITE NAME, AGE, SEX, EDUCATION AND OCCUPATION TO FILL THE MATRIX)

* Write occupation of respondent only

COLUMN 1	2	3	4	5
NAME	AGE	SEX	EDUCATION	OCCUPATION
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

SAMMARY OF HOUSEHOLD : TO BE FILLED BY TEAM LEADER AT THE TIME OF CODING

Total # of family member		Total # of children <5 Yrs.	Total # of children 5-15 Yrs	Total # of addult >15 yrs	# of males	# of females erate in the family	Total # of lit- illt. in the family	Total # of school goine	Total # of	Occupation
14	15	16	17	18	19	20	21	22	23	24

II.5 Information on house (Please tick the appropriate column).

B25

B26

B27

B28

Type of house		Owner			Type of roof				No. of rooms
Kutchha	Pucca	Self	Rented	Govt. provided	Thatched	Tiled	Concrete	Asbestos	

B25

B26

B27

B28

25-28

II.6 Amount of land held by household (USE LOCAL UNIT OF MEASUREMENT)

1. Cultivable : _____ 29-30

2. Non-Cultivable : _____ 31-32

III. MALARIA AWARENESS, SICKNESS, COSTS AND ECONOMIC LOSSES

III.1 Heave you heard about malaria ?

CIRCLE ONE

33

1. YES GO TO Q. II. 2

2. NO GO TO Q. IV-1

III.2 If, "yes", what are the signs of malaria ?

1. _____
2. _____
3. _____
4. _____
5. _____

34	
35	
36	
37	
38	

III.3 What are the causes of malaria ?

1. _____
2. _____
3. _____

39	
40	
41	

III.4 Can it be prevented before it occurs?

CIRCLE ONE

1. YES : GO TO III.5
2. NO : GO TO III.6

42	
----	--

III.5 If "yes" how can it be prevented?

1. _____
2. _____
3. _____

43	
44	
45	

III.6 In past 3 months, did you or any one in your household suffered from fever?

CIRCLE ONE

1. Yes - GO TO Q.III-7
2. No - GO TO Q.IV.1

46	
----	--

III.7 Was it malaria?

CIRCLE ONE

1. Yes - GO TO Q.III.8
2. NO - GO TO Q.IV.1
8. Don,t know GO TO Q.IV.1

47	
----	--

III.8 If "yes", how did you know that it was malaria?

WRITE _____

48

49

50

III.9 When you (or any other member of your household) had malaria, what action did you take?

PROBE FOR FIVE RESPONSES

WRITE 1. _____
2. _____
3. _____
4. _____
5. _____

51

52

53

54

55

INSTRUCTION :

(IF RESPONSE TO III.9 IS TREATMENT ASK III.10, OTHERWISE GO TO III.II

III.10 How much did you spend for that person?
Transport _____

56-58

--	--	--

Doctor's fees _____

59-61

--	--	--

Medication _____

62-64

--	--	--

Others (specify) _____

65-67

--	--	--

IF THE PRSON SUFFERED FROM MALARIA IS AN EARNING ADULT : ASK III.II,
OTHERWISE GO TO IV-I

III.II When you/that person had malaria, for how many days were you unable to work?

WRITE _____ Days

68-69

--	--

III.12 When you/that person had malaria, what type of work would you / that person have been doing?

WRITE _____

70

III.13 When you/ that person had malaria, how much would you/that person have earned for the time you/that person could not work?

WRITE Rs. _____ 71-73

--	--	--

IV. MOSQUITO NETS

IV.1 Have you ever seen a mosquito net?

CIRCLE ONE

1. Yes - GO TO Q.IV.2

74

2. No (IF NO, SHOW THE MOSQUITO NET.
IF RESPONDENT SAYS "YES" CIRCLE "1" in IV.1.,
IF RESPONDENT SAYS 'No' GO TO V.1)

IV.2 Do you have mosquito nets?

CIRCLE ONE

75

1. Yes - GO TO Q.IV.3

2. No - GO TO Q.V.1

IV.3 How many mosquito nets do you have in your household ?

_____ (nos.)

76

IV.4 Did you sleep under the mosquito net in the last one week?

CIRCLE ONE

1. Yes GO TO Q.IV.6

2. No GO TO Q.IV.5

77

IV.5 (If No) Why not?

WRITE _____

78	<input type="text"/>
79	<input type="text"/>
80	<input type="text"/>

GO TO V.1

IV.6 How many persons in your family sleep under mosquito nets?

----- (nos)

81-82

<input type="text"/>	<input type="text"/>
----------------------	----------------------

IV.7 In which season do you sleep under the mosquito nets?

83

<input type="text"/>

IF RESPONDENT/ANY ONE FROM THE HOUSE HOLD IS A NET USER, PLEASE
PROCEED TO CASE STUDY ON PAGE # 9 AFTER COMPLETING THE INTERVIEW

V. WILLINGNESS AND ABILITY TO PAY

V.1 Would you be willing to buy a mosquito net?

CIRCLE ONE

84

1. Yes GO TO V.2
2. No- GO TO V.6

V.2 (UF YES) How much could you pay for a net? : _____ (Rs)

PROBE : How much minimum you can pay?

: If cost of net is 150/-,
how much you can pay?

85-87

<input type="text"/>	<input type="text"/>	<input type="text"/>
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V.3 In which way would you like to make the payment-one time or in installemnts:

1. One timr (go to Q.V.4)
2. Istallments (go to Q.V.5)

88

<input type="text"/>

V.4 Which month of the year would you be able to pay this money?

89

<input type="text"/>

GO TO Q. V. 10

V.5 (If installment) How much would you like to pay per installment (Rs)

90-91

(Go To Q .V 10)

V.6 (If No) Why not ?

1. _____

92

2. _____

93

3. _____

94

(IF THE REASON FOR NOT BUYING THE NET IS "PRICE" ASK V . 7, otherwise terminate)

V .7 Would you be interested in paying for the net in installment ?

CIRCLE ONE

95

1. YES - GO TO Q.V.8
2. NO - TERMINATE

V. 8 In how many installments would you like to pay ?

96 - 97

V.9 How much per installment ?

98 - 99

V.10 The mosquito net is much more effective if it is dipped in the medicine- This needs to be done twice a year. This will approximately cost Rs. 14/- It will give you one year protection -would you be willing to pay for this?

CIRCLE ONE

100

1. YES
2. NO

FN : BLINE.BNT
DATE : 12.10.9

CASE STUDY FOR THE NED-NET USER

Put the following questions to the Mosquito net users.

1. When and from where did you buy the mosquito net and how much did you pay for it ?
2. Since how long have you been using the mosquito net(s) and how do you fix the net ?
3. How often do you wash your net, where do you wash it and what do you use for washing ?
4. Observe size, type and condition of the mosquito net (s).

INTERVIEWER'S OBSERVATION

(To be filled in after completing interview)

Comments About Respondent

:

Comments on Specific Questions

:

Any Other Comments

:

SUPERVISOR'S OBSERVATIONS

Name of Supervisor : ----- Date -----

EDITOR'S OBSERVATIONS

ISSUES FOR FGD

One Focus Group Discussion (FGD) each will be conducted in the 6 AWCs to obtain insight into the social and cultural differences between male and female by season in the tribal community - Three of these will be conducted with women and the remaining three with men. The FGD will explore the issues of :

1. The work pattern
2. Income and expenditure pattern (Sources of Income by season)-
3. Sickness level
 - Variation of diseases according to Seasonality, attitudes regarding treatment.
 - Sources, reasons, amount spend for treatment.

Other issues like Malaria Control Programme in the village will be covered through group discussion in 6 (same) groups.

a. Preventive measures

- Spraying insecticides
- Distribution of Chloroquine
- Traditional methods
- Coils
- Bio-environmental measures

b. Curative measures

- Obtaining Chloroquine

c. Distribution point of Mosquito nets within their own village

d. Identification of probable opinion leaders for promotion of mosquito nets use in the village

ORISSA

—22°

—21°

—20°

—19°

—18°

182°

183°

184°

185°

186°

187°

W. BENGAL

MAHABHARAT

KEONJHAR

BALASORE

BHADRAK

JAJPUR

KENDRAPARA

JAGATSINGPUR

PURI

KHURDA

CUTTACK

DHENKANAL

ANGUL

SAMBALPUR

DEOGARH

JHARSUGUDA

SUNDARGARH

BARGARH

SONEPUR

BOUDH

NAYAGARH

KHONDHAL

(PHULBANI)

GANJAM

GAJAPATI

RAYAGADA

NAWARANGPUR

KALAHANDI

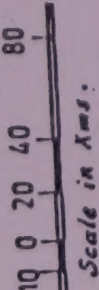
BALANGIR

NAWAPARA

KORAPUT

MALKANGIRI

ANDHRA PRADESH



Scale in kms.

REFERENCE

State Boundary

District

ASSINO



